

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous listings and versions of claim in this application.

1. (Currently Amended) A method for adjusting the thickness of a thin semiconductor material layer, which comprises:
 - measuring said layer to establish a thickness profile;
 - comparing the measured thickness profile with stored standard profiles, wherein each standard profile is stored in association with respective thickness adjustment specifications;
 - selecting a stored standard profile to associate said layer with the respective thickness adjustment specification; and
 - adjusting the actual thickness of said layer by simultaneously treating the entire surface of said layer selectively in accordance with the thickness adjustment specification.
2. (Original) The method according to claim 1 wherein the thickness adjustment specifications are recipes.
3. (Original) The method according to claim 2 which further comprises establishing associations between the stored standard profiles and the recipes.
4. (Original) The method according to claim 3 which further comprises establishing associations by using an algorithm having a target specification input for thickness profile established for layer fabrication.
5. (Original) The method according to claim 4 which further comprises using identical meshes to establish the thickness measurements, the standard profiles, and the target specification.

6. (Original) The method according to claim 4 which further comprises automatically reactivating the configuration algorithm on each change of target specification to establish a new configuration defining correspondences between the standard profiles and the recipes.

7. (Original) The method according to claim 1 which further comprises storing at least one configuration associated with the thickness measurement.

8. (Original) The method according to the claim 7 which further comprises storing a plurality of configurations, and selecting a desired configuration.

9. (Original) The method according to claim 1 which further comprises classifying at least one of the standard profiles and the recipes in a tree structure defining categories and sub-categories with a desired number of levels.

10. (Original) The method according to claim 9 which further comprises selecting zones of the standard profile tree structure within which to undertake a search in order to select a standard profile.

11. (Original) The method according to claim 9 which further comprises defining the recipe tree structure by finer and finer levels of detail.

12. (Original) The method according to claim 4 wherein the algorithm selects categories of recipes as a function of thickness differences between the target and the standard profile to establish a configuration, without searching through all recipes.

13. (Original) The method according to claim 4 which further comprises:
establishing a link between a starting level of a standard profile tree structure and an arrival level of a recipe tree structure, such that for each standard profile belonging to a given category of starting level there exists an arrival level category of recipes;

searching for a recipe for a standard profile at the starting level by automatically directing the search towards the arrival level category; and

continuing the search by going deeper into the recipe tree structure to establish a configuration.

14. (Original) The method according to claim 9 wherein the recipe tree structure is defined by recipe parameters.

15. (Original) The method according to claim 14 wherein the high level categories of recipes in the recipe tree structure include:

a first high level recipe category defining a uniform thickness adjustment specification for the entire surface of the layer; and

additional high level categories depending on overall distribution parameters for thickness adjustment specifications over the surface.

16. (Currently Amended) A method for adjusting the actual thickness of a thin semiconductor material layer, which comprises:

measuring said layer to establish a thickness profile;

comparing the measured thickness profile with stored standard profiles, wherein each standard profile is stored in association with respective thickness adjustment specifications;

selecting a stored standard profile to associate said layer with the respective thickness adjustment specification; and

[[by]] applying thickness adjustments simultaneously and selectively to the entire layer surface, wherein the adjustments [[may]] differ depending on location on the layer surface.

17. (Original) The method according to claim 1 which further comprises adjusting the layer thickness by sacrificial oxidation.

18. (Currently Amended) A method for adjusting the thickness of a thin semiconductor material layer during processing of batches of such layers, which comprises:

measuring ~~[[said]]~~ a first layer to establish a thickness profile;

comparing the measured thickness profile with stored standard profiles, wherein each standard profile is stored in association with respective thickness adjustment specifications;

selecting a stored standard profile to associate said layer with the respective thickness adjustment specification; ~~[[and]]~~

adjusting the actual thickness of said first layer by simultaneously treating the entire surface of said first layer selectively in accordance with the thickness adjustment specification, and

~~[[by]]~~ treating remaining layer surfaces of the batches of layers, ~~wherein one layer thickness in the batch is adjusted by adjusting the actual thicknesses of the remaining layer surfaces in accordance with the thickness adjustment specification of the first layer a certain given pitch while a subsequent layer thickness is being measured.~~

19. (Original) The method according to claim 18 wherein the layers of a given batch share the same final target thickness, and the recipe for each layer is individualized to ensure that once thickness adjustment has been completed, a mean layer thickness is obtained for the batch that is as close as possible to the common target.

20. (Original) The method according to claim 2 wherein the recipes correspond to at least one of uniform thickness modification across the layer, or differential thickness modification across the layer.

21-22. (Cancelled)

23. (Previously Presented) The method according to claim 1 wherein each standard profile is stored in storing means and the measured thickness profile is compared with stored standard profiles by a processor unit associated with the storing

means, with the processor configured to receive measurements made on the layer from thickness measuring means, and to forward thickness adjustment specifications to thickness adjustment means.

24. (Previously Presented) The method according to claim 23 wherein the thickness measuring means is at least one of an ellipsometer and a reflectometer.

25. (Previously Presented) The method according to claim 1 which further comprises an additional finishing step that includes annealing under hydrogen and that is implemented after the thickness adjusting step.

26. (Previously Presented) The method according to claim 1 which further comprises implementing a relatively large adjustment of thickness in a uniform manner over the layer, followed by implementing a finer differential adjustment for compensating for local non-uniformities of thickness of the layer.